



Opioid-Related Overdose Deaths in Montana by Industry and Occupation, 2015 - 2024

*Prepared by Andrew Matheison, Occupational Epidemiologist
Montana Occupational Health and Safety Surveillance Program
Montana Department of Labor & Industry*

Opioid-related overdose deaths (or OROD) are the most severe outcome of the public health crisis relating to opioid use and addiction. In the past decade, many states have experienced a dramatic increase in OROD incidents, and Montana is no exception; OROD rates more than doubled from the mid-2010s to the early 2020s.¹ In response, public health stakeholders have examined data on OROD incidents to determine how opioid use leads to addiction and overdose in order to develop the most effective prevention policies. While the specific reasons for drug addiction and overdose vary by the case, previous research has identified workplace injuries as a potential precipitating factor of opioid use, addiction, and overdose.² Moreover, this research has identified specific industries and occupations with elevated rates of OROD. This report identifies industries and occupations in Montana with elevated rates of OROD, providing workplace safety and health stakeholders with guidance for prevention efforts.

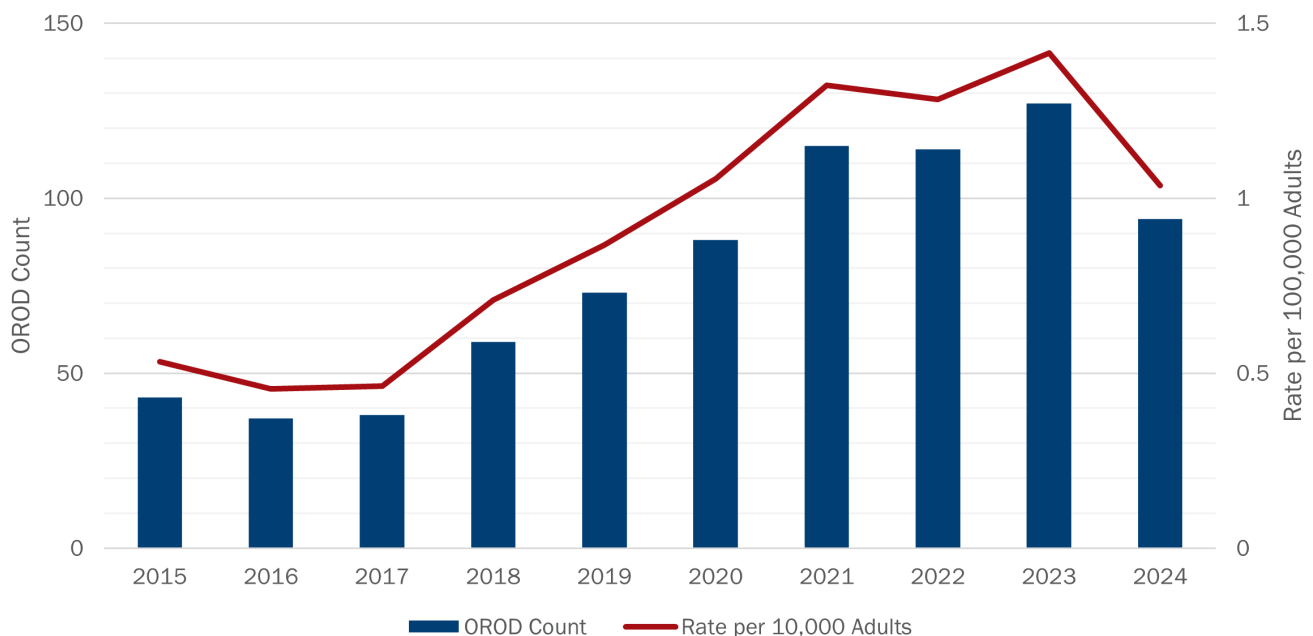
Methodology

To develop an understanding of the nature of OROD in Montana, researchers at the Montana Department of Labor & Industry (DLI) accessed Montana Vital Statistics data from the Montana Department of Public Health and Human Services' (DPHHS). The data included all deaths in Montana between 2015 and 2024 which were classified with an International Classification of Diseases (ICD) code indicating overdose from opioids. Researchers examined the descriptive data in the industry and occupation fields of each case, excluding cases with insufficient data, cases in which the deceased was not working, or cases where the deceased was above or below working age (younger than 18 or older than 69). Cases that included descriptive data on the industry and occupation of the deceased were assigned codes using the NIOSH Industry Occupation Computerized Coding System (NIOCCS), which combines codes from the North American Industry Classification System (NAICS) and occupation codes from the Standard Occupational Classification (SOC). Additionally, DLI accessed employment data from the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) and Occupational Employment and Wage Statistics (OEWS) to produce mortality rates with confidence intervals to indicate statistical significance.

Findings

Between 2015 and 2024, 788 Montanans died from opioid-related overdoses. As illustrated in Figure 1, both the count and rate of ORODs increased dramatically in the early 2020s, indicating that OROD prevalence outpaced Montana's adult population during this decade. Publications from the U.S. Department of Health & Human Services link the increase in ORODs to increased use of synthetic opioids such as fentanyl.³

Figure 1: Montana Opioid Deaths by Year, 2015 - 2024



Identifiable employment information was provided in the majority of OROD cases; 590 cases (75% of total) contained an identifiable industry and 574 cases (73%) contained an identifiable occupation. Industry rates are visualized in Figure 2 alongside the state OROD rate. Construction had the highest OROD rate, with 4.28 deaths per 10,000 full-time equivalent workers (FTE). Construction and accommodation and food services had OROD rates significantly higher than the Montana rate ($p < 0.05$). Several other industries also reported OROD rates above the state average, but most of these rates were determined to not be statistically significant.

Figure 2: OROD Rate Per 10,000 FTE, Select Industries

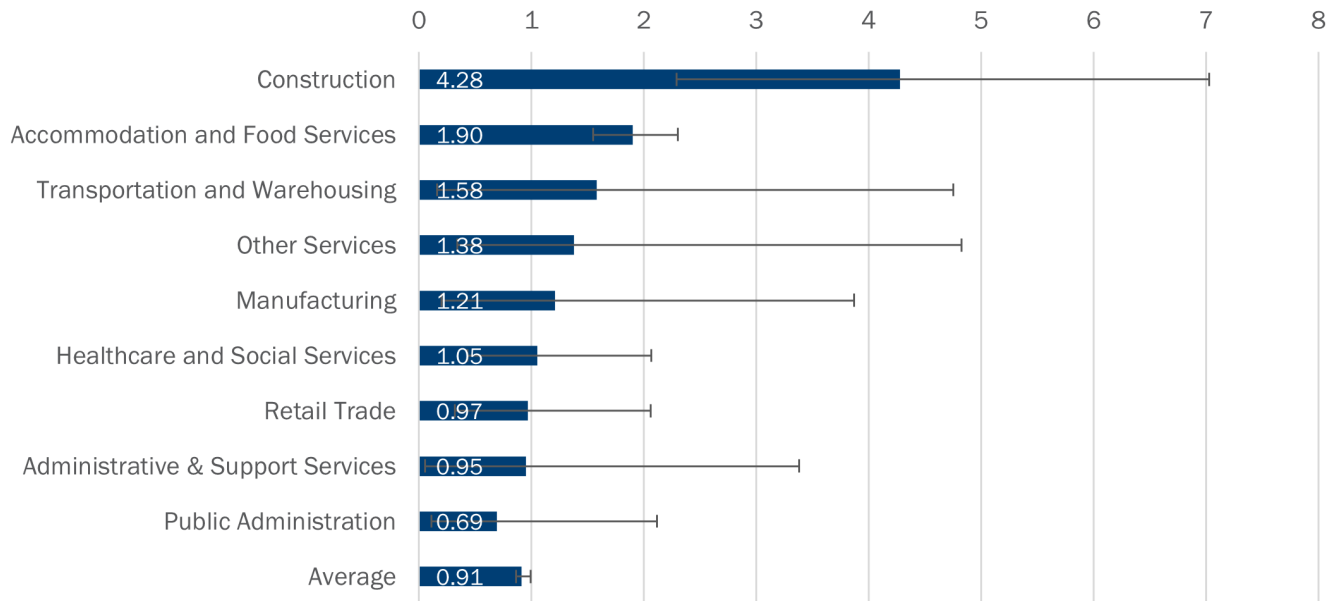
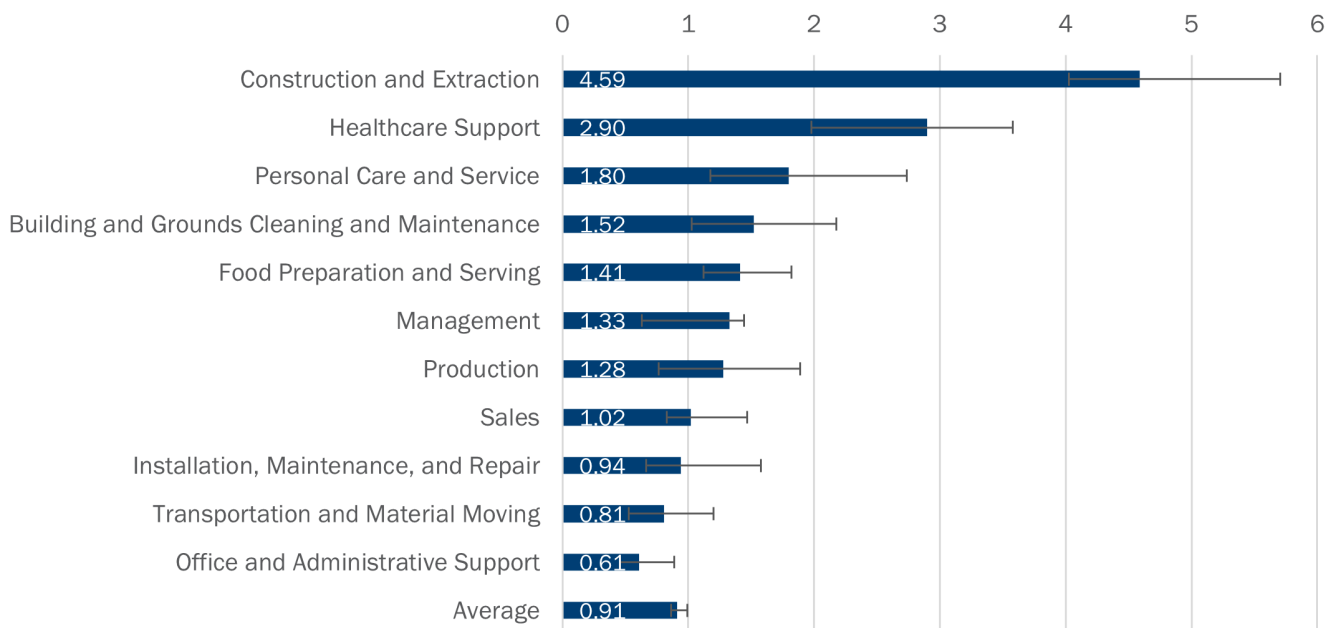


Figure 3 provides the same analysis of OROD rates for occupational data. Construction and extraction had the highest OROD rate, with 4.47 deaths per 10,000 FTE. This occupational group, along with healthcare support, personal care and service, and building and grounds cleaning and maintenance, were significantly higher than the Montana rate ($p < 0.05$).

Figure 3: OROD Rate Per 10,000 FTE, Select Occupations



Discussion and Next Steps

This analysis of Montana's OROD data serves two purposes. First, it provides a timeline of OROD, illustrating the significant rise observed in the early 2020s and confirming the prior findings of DPHHS.⁴ While many states observed an increase in OROD during this time period, Montana's rate was one of the lowest.⁵ Second, it provides new perspective on who in Montana is experiencing OROD, identifying industry and occupation data in the OROD cases and allowing groups of workers to be compared to the state rate. This process identified three groups- construction workers, food servers and preparers, and healthcare support workers- which account for roughly half of all OROD cases with an identifiable industry and occupation. This analysis also identified some additional industry and occupation groups for further analysis. By moving into more detailed NAICS industry coding, researchers found workers in automotive maintenance (a subgroup of the "other services" industry) experienced OROD at a similar rate to workers in construction, and landscaping workers represented a majority of cases in the administrative and support services industry. Two other industries, agriculture (including forestry, hunting, and fishing) and mining (including quarrying and oil/gas extraction) lacked sufficient OROD cases to be included in the rate comparison analysis due to low counts (n<16); this also impacted the occupation group of farming, fishing, and forestry. Because these industries have been identified as higher risk in OROD literature produced in more populous states, the researchers believe these industries should be considered in future research and outreach efforts aimed at understanding OROD and combating drug overdose.

The findings of this analysis should be carefully interpreted with consideration for substantial limitations. First, this analysis does not establish a causal relationship between industry-specific occupational conditions and the number or rate of OROD incidents; in other words, researchers do not know if a workplace injury or non-injurious work factors contributed to an individual's use of or overdose from opioids. This analysis was also limited by constraints of Montana's vital statistics dataset, with the potential for coding errors. The coding errors also extend to the NIOCCS system, which could not always establish an industry and occupation from the qualitative data provided. Finally, the researchers urge caution when interpreting rates and drawing comparisons to OROD occurrence in other states.

Even with its limitations, this analysis provides a clear conclusion to workplace safety stakeholders: opioids are a problem impacting the workforce, and reducing the impact of OROD is a workplace safety and health issue. DLI encourages workers and employers to take full advantage of public health resources designed to combat opioid abuse, addiction, and overdose, including the following:

- The Substance Use Disorder Services administrated by DPHHS
- The Naloxone and Fentanyl Test Strip programs administered by DPHHS
- Resources on preventing opioid use disorder provided by the Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services

In addition, DLI continues to encourage workers and employers to promote safe working practices, reducing the risk of workplace injury which can lead to the use of prescribed or illicit opioids to treat pain. By developing and implementing a comprehensive strategy for combating use and addiction, workers in Montana can help reverse the devastating impacts of the opioid epidemic and achieve a worthwhile victory for public health.

References

¹ From the Montana Department of Public Health and Human Services Injury and Overdose Indicators Dashboard

² From the Massachusetts Department of Public Health, "Opioid-Related Overdose Deaths by Industry and Occupation in Massachusetts by Industry and Occupation, 2011-2015"

³ From the U.S. Department of Health & Human Services Overdose Prevention Strategy

⁴ From the Montana Department of Public Health and Human Services, "Summary of Opioid Use in Montana"

⁵ From the Opioid Overdose Death Rates per 100,000 Data Dashboard from the CDC, visualized by KFF

Table 1: Count and Rate per 10,000 FTE of Opioid-Related Overdose Deaths (OROD) by Select Industry and Occupation, 2015-2024

Industry	OROD Count	OROD Rate Per 10,000 FTE
Construction	143	4.28 (2.29, 7.02)
Accommodation and Food Service	104	1.90 (1.55, 2.30)
Other Services	31	1.58 (0.15, 4.75)
Transportation and Warehousing	24	1.38 (0.34, 4.82)
Manufacturing	25	1.21 (0.20, 3.87)
Healthcare and Social Services	77	1.05 (0.43, 2.07)
Retail Trade	58	0.97 (0.32, 2.06)
Administrative & Support Services	18	0.95 (0.06, 3.38)
Public Administration	26	0.69 (0.11, 2.12)
Occupation	OROD Count	OROD Rate Per 10,000 FTE
Construction and Extraction	138	4.59 (4.03, 5.71)
Healthcare Support	48	2.90 (1.98, 3.58)
Personal Care and Service	23	1.80 (1.18, 2.74)
Building and Grounds Cleaning and Maintenance	30	1.52 (1.03, 2.18)
Food Preparation and Serving	71	1.41 (1.12, 1.82)
Management	27	1.33 (0.62, 1.44)
Production	23	1.28 (0.77, 1.89)
Sales	49	1.02 (0.83, 1.47)
Installation, Maintenance, and Repair	21	0.94 (0.67, 1.58)
Transportation and Material Moving	27	0.81 (0.53, 1.20)
Office and Administrative Support	39	0.61 (0.46, 0.89)